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ABSTRACT

The purpose of this study was to investigate whether teachers interact differently with handicapped and normal students in a mainstreamed physical education class. Four elementary physical education classes were videotaped on five separate occasions. The resulting data were analyzed for differences in teacher-student interaction. It was observed that handicapped students received more positive feedback than normal students. However, normal students tended to receive more corrective feedback. A brief discussion is presented of the implications of these findings for educational settings other than physical education. (JD)

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A Descriptive-Analytic Study of Teacher-Student Interaction in Mainstreamed Physical Education Classes

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In recent years, the term mainstreaming has become a household word. Simply defined, mainstreaming is the act of placing eligible handicapped students into regular education classes with their normal peers. The practice of mainstreaming is mandated by law, yet it remains a controversial issue due, in part, to inconsistent research findings and the philosophical beliefs of parents and educators.

Much of the mainstreaming research has been conducted on handicapped students who have been placed full time into the regular education class. However, in most cases, handicapped students are progressively mainstreamed into the regular education class. This is accomplished by placing handicapped students into the regular curriculum for short periods during the day, gradually making these time periods longer. The mainstreaming process usually begins with placement into "non-academic" areas such as art, music and physical education.

There has been no research to date concerning the nature and structure of the mainstreamed physical education class. As a result,physical educators remain unsure about whether or not the needs of handicapped students can be met in this type of setting. It was this void in the literature that prompted the present study.

This study was designed to describe and analyze teacher-student interaction in mainstreamed physical education classes. Research in elementary and junior high school classes has shown that teacher-student interaction is an important variable that influences academic learning and therefore, it was rationalized a study of this nature would be an appropriate starting point for researching the mainstreamed physical education class. The purpose of the study was to answer the question: Do physical education teachers interact differently with handicapped and normal students within mainstreamed physical

education classes in elementary schools?

Four second-grade physical education classes were selected from a pool of classes within 28 school districts. One class contained two handicapped children, two classes contained three handicapped children and one class contained six handicapped children. These children were mainstreamed into second-grade physical education classes from self-contained special education classes or resource rooms. All classes were taught by male physical education specialists. All handicapped students were identified as learning disabled (LD).

Each class was videotaped on five different occasions. Two videotape cameras equipped with wide angle lenses were used to record the class activities. The physical education teachers wore a wireless microphone to ensure accuracy of their verbal behavior. For identification purposes, each child wore a jersey with a large numeral on the front and back.

A descriptive analysis of the classroom observation data was gained through the use of the Observational System for Instructional Analysis - Physical Education (Olson, 1979). This instrument (OSIA-PE) is a categorical observation system which allows the verbal and non-verbal behavior of teachers and students to be coded in physical education settings. Events are coded every five seconds and in this fashion, patterns of teacher-student interaction can be examined.

The videotape data was coded by two trained observers who had completed a 60-hour training period and who had attained average intra-rater, inter-rater and criterion reliabilities of .80 as determined by Cohen's reliability formula. Coder reliabilities were checked twice during data coding and revealed that the coders maintained .80 reliability during data coding phase.

Coders viewed each videotape once for each handicapped child in a class and once for each of an equal number of normal children matched for sex and

randomly selected from the rest of the class. The focus for coding was on one individual each time the tapes were viewed.

Analysis of the coded data yielded frequency counts and percentages of behavior in all OSIA-PE categories for each teacher and student coded. Ratios were obtained for each of the dependent variables which were selected on the basis of a review of current literature and included: teacher positive appraisal/negative appraisal; teacher general appraisal/specific appraisal; teacher appraisal of skill performance/teacher appraisal of behavior; student functional behavior/non-functional behavior; all student behavior/student movement behavior; student substantive behavior/managerial behavior; and student responses followed by teacher solitation/student responses followed by teacher appraisal.

A 4 class x 2 group x 4 session multivariate analysis of variance with repeated measures on the last factor (session) was performed using the seven dependent variables as the criteria. MANOVA revealed significant main effects for class and session as well as significant class x session and class x group x session interaction effects.

The overall multivariate F-ratio for the main effect of group did not reach significance. However, examination of the univariate F-ratios revealed some interesting findings. There was no difference between handicapped and normal students in the amount of nonfunctional (off-task) behavior. This finding is contrary to other studies which report that handicapped children (EMR and LD) exhibit more nonfunctional behavior than normal children in the same class. Krupski (1979) states that the demands of a non-academic task

are different than those of an academic task and the capacity of the student interacts with the demands to influence attending (on-task) behavior. It is possible that the task demands of physical education activities influenced the attending behavior of the handicapped students so that differences normally seen between handicapped and normal students in the regular classroom disappeared in the physical education class. If verified, this might provide indirect support for the practice of beginning the mainstreaming process by placing handicapped students in nonacademic areas such as physical education, art and music.

There was no significant difference between handicapped and normal students in the amount of time spent practicing motor skills. It should be noted, however, that the amount of class time devoted to the practice of motor skills was generally very low although there was variation that occurred from class to class. This has important implications for the handicapped students in these classes since they frequently require more time than normal students to acquire and perfect motor skills.

Handicapped students received more positive feedback than normal students. On the other hand, normal students tended to receive more corrective feedback than handicapped students. Positive feedback or praise is important in the sense that it motivates students to perform, especially low ability students. However, it does not contain the information needed by students to help acquire or modify motor skills. Given the fact that handicapped students often have highly variable and erratic motor performance, it seems that teachers should be making a concerted effort to provide handicapped students with corrective feedback.

In addition to these findings, handicapped students received more general feedback and were less likely to receive a feedback directly following a movement response (i.e. immediate feedback) than normal studnets. These findings were, however, specific to class and session. It should also be noted that the total number of feedbacks given to students by the teachers in this study was very low, although variation did occur from class to class and session to session. Generally speaking the number of feedbacks given by the teacher varied as the content and organization of each class varied. Classes in which all children were active at a given time and were working individually or in pairs produced the fewest number of dyadic contacts-especially feedbacks. Teachers in these situations spent most of their time simply watching the activity or soliciting class responses.

Classes in which only a few children were active at a given time and most were standing in line waiting their turn produced the greatest number of dyadic contacts. Teachers in these situations spent more time providing individual students with feedback concerning their performance. This finding is probably a result of the fact that when fewer students are performing at a given time, the teacher has more time to reflect upon and assess individual students' performance. We know from the literature that opportunity to perform accompanied by feedback is important for learning. The teachers in this study played these two off against each other, ie. less opportunity to perform was accompanied by more feedback and more opportunity to perform was accompanied by less feedback.

The nature of this study was such that many more questions were raised than answered. However, two comments are in order. First, research of this

nature in elementary and junior high school mathematics and reading classes have shown that teachers can make a difference in student achievement. Certain teachers are able to make students learn more and their success is related to patterns of teaching behavior (Brophy, 1980). Two key variables appear to be student opportunity to practice and teacher feedback. The findings of the present study indicated a great deal of variation in both student opportunity to practice and teacher feedback, findings that suggest that different amounts of learning may have taken place in these classes.

Secondly, the differences seen between groups (normal and handicapped) on some of the feedback variables are difficult to interpret. It is possible that there were performance differences between the handicapped and normal students and as a result, the teachers gave the students feedback appropriate to their skill level. On the other hand, if there were no performance differences between the handicapped and normal students, then the presence of differential feedback could be a suitable indication of teacher education effects.

Whatever interpretations are made, it is clear that more research is necessary before definitive conclusions can be reached. The implications of this study and future studies are great for teacher training programs.